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A decomposition for Markov processes at an independent exponential time

Mihael Perman

Abstract: The path of Markov process X run up to an independent exponential random time S_θ can be decomposed into the part prior to the last exit time from a point before S_θ, and the remainder up to S_θ. In this paper the laws of the two segments are identified under suitable assumptions using excursion theory.

Keywords: Markov processes, excursions, last exit decomposition, diffusions, Brownian motion.

Math. Subj. Class.: 60J25, 60J55, 60J60, 60J65, 60G51

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Dekompozicija za Markovske procese pri neodvisnem eksponentnem času

Mihael Perman

Povzetek: Pot Markovskega procesa X, ki teče do neodvisnega eksponentnega slučajnega časa S_θ, se da dekomponirati v del pred zadnjim izhodnim časom od točke pred S_θ, in v preostanek do S_θ. V tem članku identificiramo zakone teh dveh segmentov pod primernimi predpostavkami z uporabo ekskurzijske teorije.

Ključne besede: Markovski procesi, ekskurzije, dekompozicija zadnjega izhoda, difuzije, Brownovo gibanje.

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